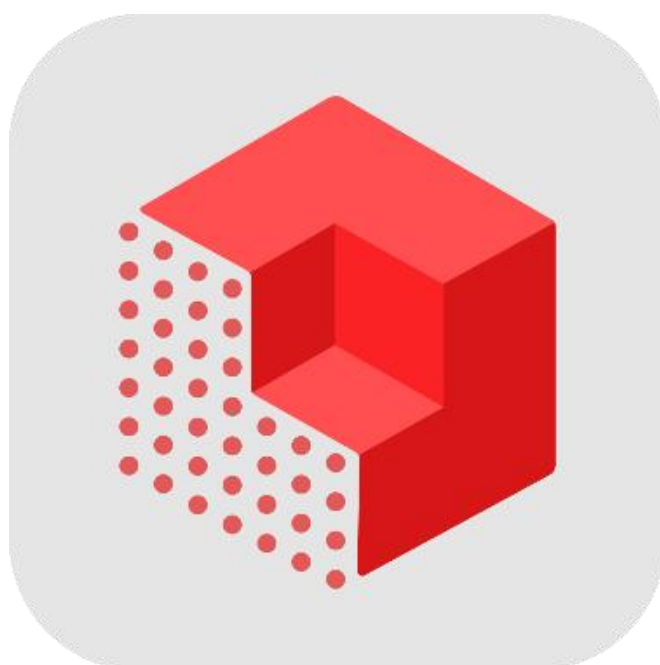


Revo Scan 5

User Guide



Contents

1. Introduction	1
2. Download	1
3. Read Before Scanning	1
4. Scanning Flow	2
5. User Interface	3
5.1 Home Page	3
5.2 Workspace Interface	4
5.2.1 Workspace Interface Overview	4
5.2.2 Scan Settings	6
5.3 Model Processing Interface	8
5.3.1 One-tap Edit	8
5.3.2 Manual Edit	8
5.3.3 Selection Tools	12
5.3.4 Others	12
6. Model & Project Management	13
6.1 Project Management	13
6.2 Model Management	14
7. Using Accessories	14
7.1 Dual-axis Turntable	15
7.2 Dual-axis Turntable-Advanced Mode	15
7.3 Large Turntable	16
7.4 Handheld Stabilizer	17
8. Help	17
8.1 Scanning Tips	17
8.2 Join a Fun Scanning Community	19

1. Introduction

Revo Scan is an advanced 3D scanning and post-processing app that's your gateway to creating 3D models with Revopoint 3D scanners. It supports Windows, macOS, Android, and iOS systems.

This guide will explain how to use the mobile Android version of Revo Scan to perform 3D scans quickly and easily and create a complete 3D model.

2. Download

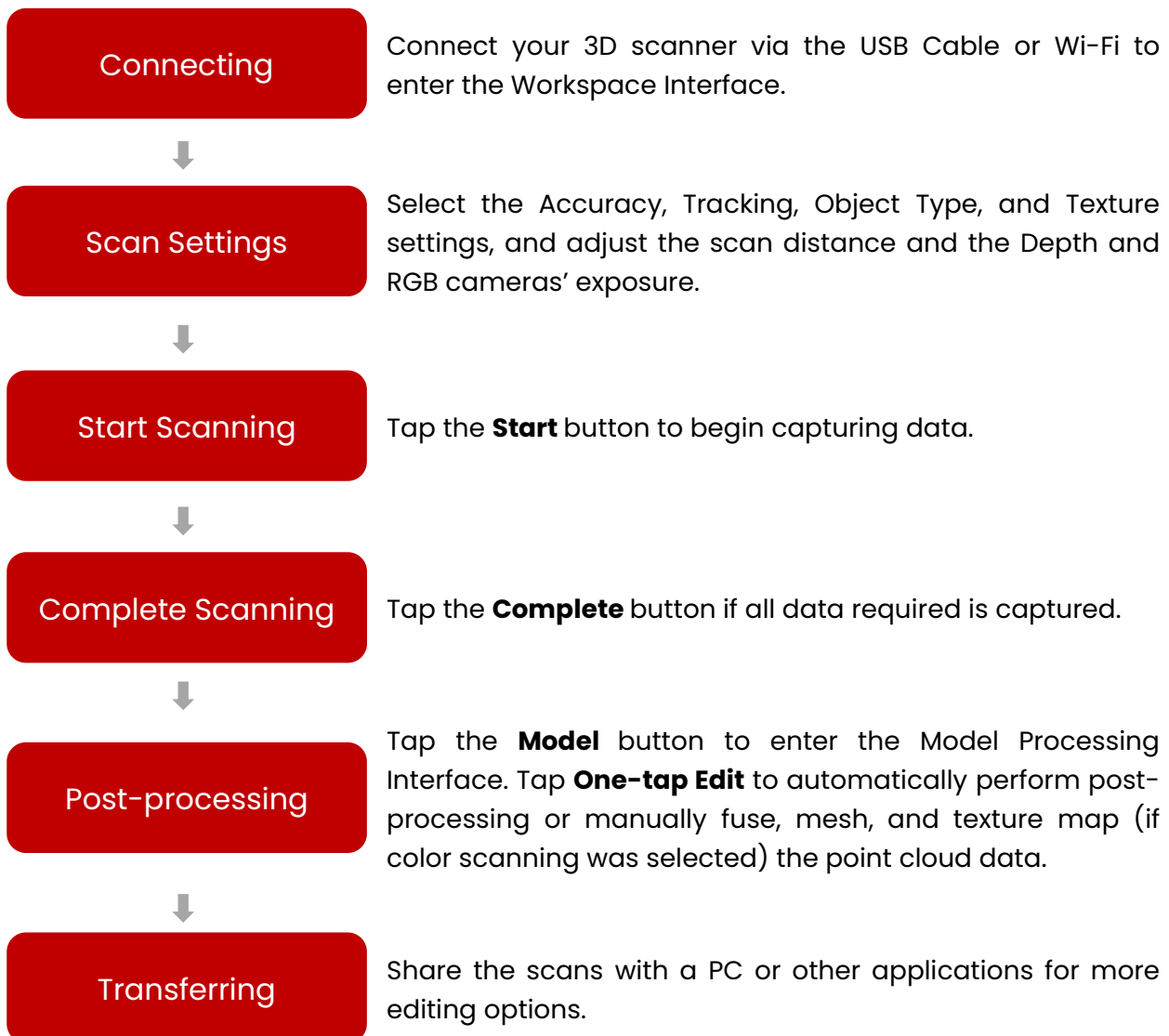
To use your Revopoint 3D scanner, you must download the Revo Scan software. It can be found by searching for “**Revo Scan**” in the Google Play store. The system requirements and connection mode are as follows:

System Requirements	Connection Method	
System Version: Android 9.0 or better RAM: ≥ 8 GB Storage: ≥128 GB	USB	✓
	Wi-Fi	✓

3. Read Before Scanning

- 1) Before opening Revo Scan, power on your scanner and connect it to your smartphone. Refer to the Quick Start Guide in your scanner's box or tap the **View the Connection Guide** icon on Revo Scan's Home page for details. Alternatively, you can go to the bottom of the “Support-Download” section on Revopoint's website and get your scanner's latest Quick Start Guide.
- 2) If you need more post-processing functions, export the project captured on your smartphone to Revo Scan (PC).
- 3) Keep your version of Revo Scan up-to-date for the best user experience.
- 4) Software updates may alter Revo Scan's UI. While we'll try our best to keep this guide up to date, some things may slip through. If it isn't in the guide, please ask in our forums.

4. Scanning Flow

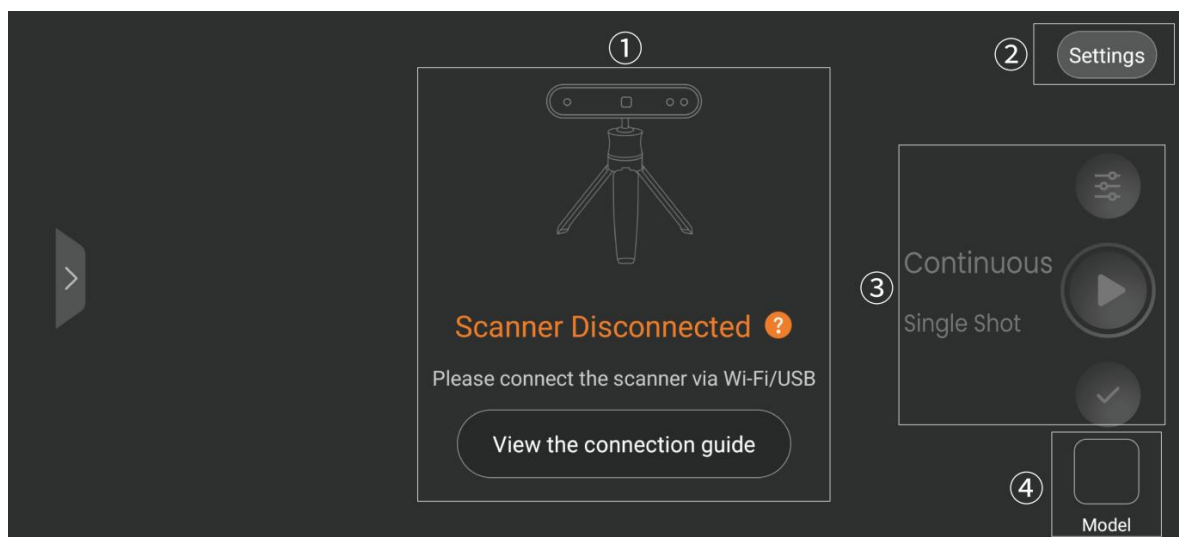


The screenshots below show a POP 3 3D scanner connected to Revo Scan on Android 13.

5. User Interface

5.1 Home Page

Tap the Revo Scan icon to open the app. The Home page shows the scanner's connection status, settings button, scan settings and control buttons, and model button.



① Scanner Connection

Displays the scanner's connection status and the connection guide. Tap **Scanner Disconnected** to jump to your smartphone's Wi-Fi Settings.

② Settings

Here, you can connect and control accessories, select the app's language, select the model's color and surface properties, view the app's user guide, watch tutorial videos, check the app's version, and send feedback to our support team.

③ Scan Settings and Control Buttons

: Tap to select scan settings before scanning. Refer to the Scan Settings section for details.

Continuous/Single Shot: Tap to select either Continuous or Single-shot scanning.

: Tap to start/pause the scan.

: Tap to finish scanning when all required data is captured.

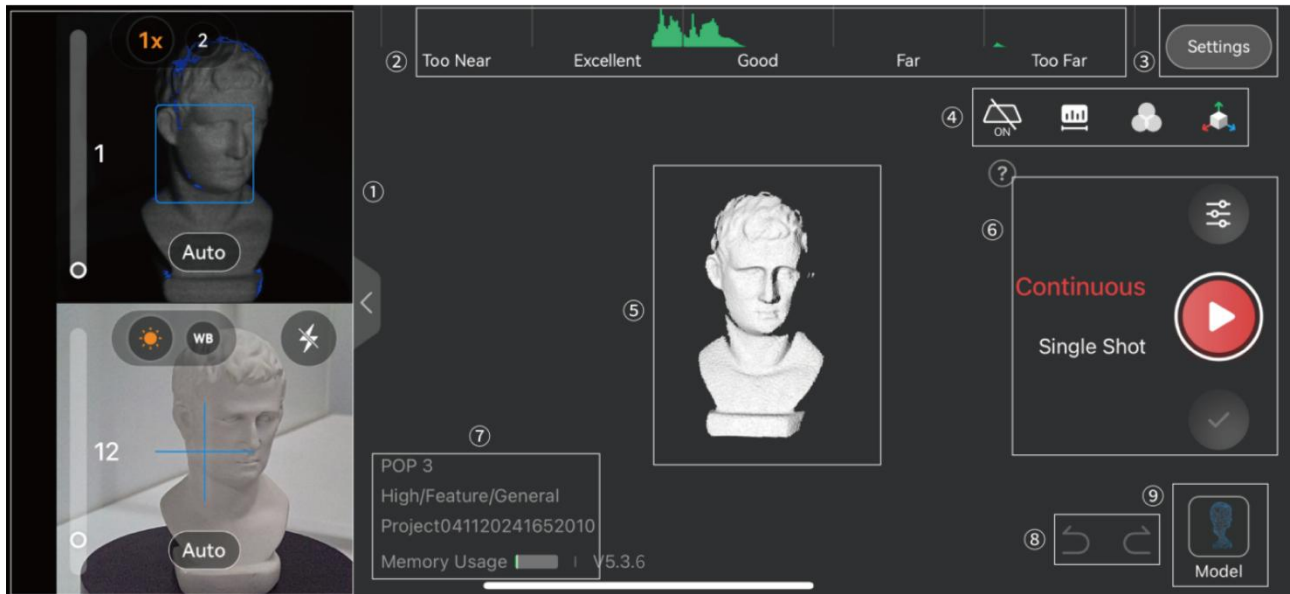
Note: These buttons are not functional when a scanner is not connected.

④ Model

Tap the Model button to perform post-processing or manage the projects and models.

5.2 Workspace Interface

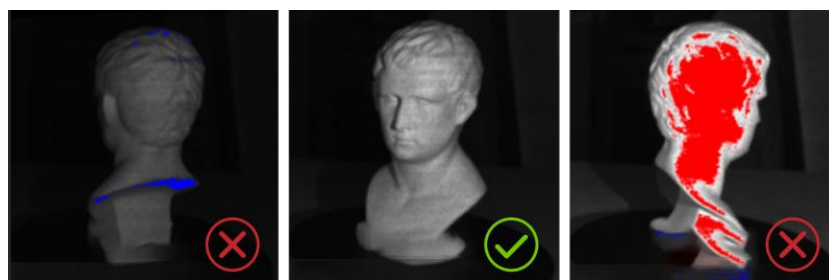
5.2.1 Workspace Interface Overview



① Camera Preview Windows

● Depth Camera

- **Exposure Settings:** The depth cameras' exposure can either be set to auto-exposure or manually adjusted. To ensure an accurate scan, adjust the exposure until there are as few blue and red patches on the object as possible in the Depth Camera window.

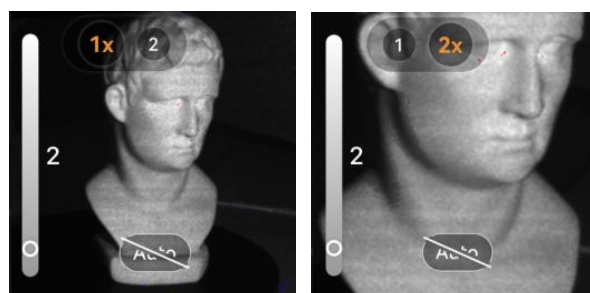


Underexposed

Correct Exposure

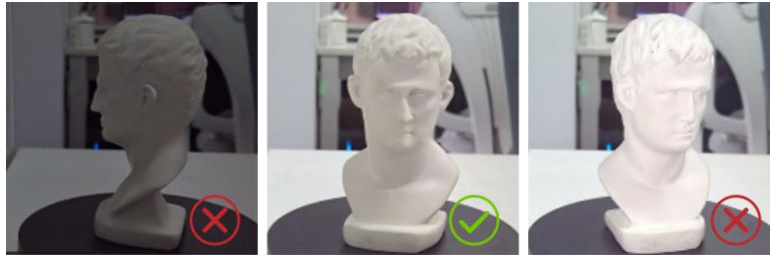
Overexposed

- **Digital Zoom:** When capturing smaller objects, the Depth Cameras' up to x2 digital zoom makes it easier to focus the scanner so it only captures the object's surface data.



● RGB Camera

-  **Exposure Settings:** Adjust the exposure until the colors look accurate in the RGB camera preview window, or set it to auto.



Underexposed

Correct Exposure

Overexposed

-  **White Balance:** Either set the white balance to auto or adjust it till the colors look accurate.
-  **Flash LEDs:** Tap to toggle on/off the RGB Camera's Flash LEDs to enhance color scans or help to make marker points more visible while performing a scan using Marker Tracking (Only for scanners with Flash LEDs).

② Distance Indicator

Shows a visual indicator representing the distance between the object and the scanner. When the color bars are green, the distance is optimal.

③ Settings

Here, you can check the settings of the accessory and the app.

④ Tool Bar



Base Removal: Toggle it on to enable automatic deletion of any unwanted flat surfaces detected (e.g., a table or floor). If scanning an object with many flat surfaces, turn this off to avoid deleting any of the object's surfaces.



Scanning Distance: Use the slider to adjust the Depth Cameras' working distance to ignore unwanted background or foreground objects.



Color: Shows or hides the object's texture. This button is only functional when color scanning is enabled.



3D Coordinates: Click the icon to reset the model to its original position.

⑤ Central Preview Window

Displays the 3D model preview, the data being captured during the scan, or the final completed model.

The 3D model can be manipulated using finger gestures:

- Two-finger drag for panning

- Two-finger spread to zoom in and pinch to zoom out
- One-finger drag for rotation

⑥ Scan Settings and Scanning Buttons

 Scan Settings: Tap to select scan settings before scanning. Refer to the **Scan Settings** section for details.

Continuous: The scanner captures point clouds continuously.

Single-shot: The scanner captures a single frame of the object each time the Start button is tapped.

Note: In single-shot mode, the frames must overlap by at least 50%, or they won't align.

Check your model via the central preview window. If it's incomplete, click the Start button to continue your scan.

 : Tap to start or pause scanning.

 : Tap to finish scanning when all required data is captured.

 : Tap to delete the captured data during a scan.

⑦ Connection and Project Information

Displays the connected 3D scanner's name, scan settings, the project name, and memory usage.

⑧ Redo & Undo Buttons

 Redo: Tap to remove the scanned frames.

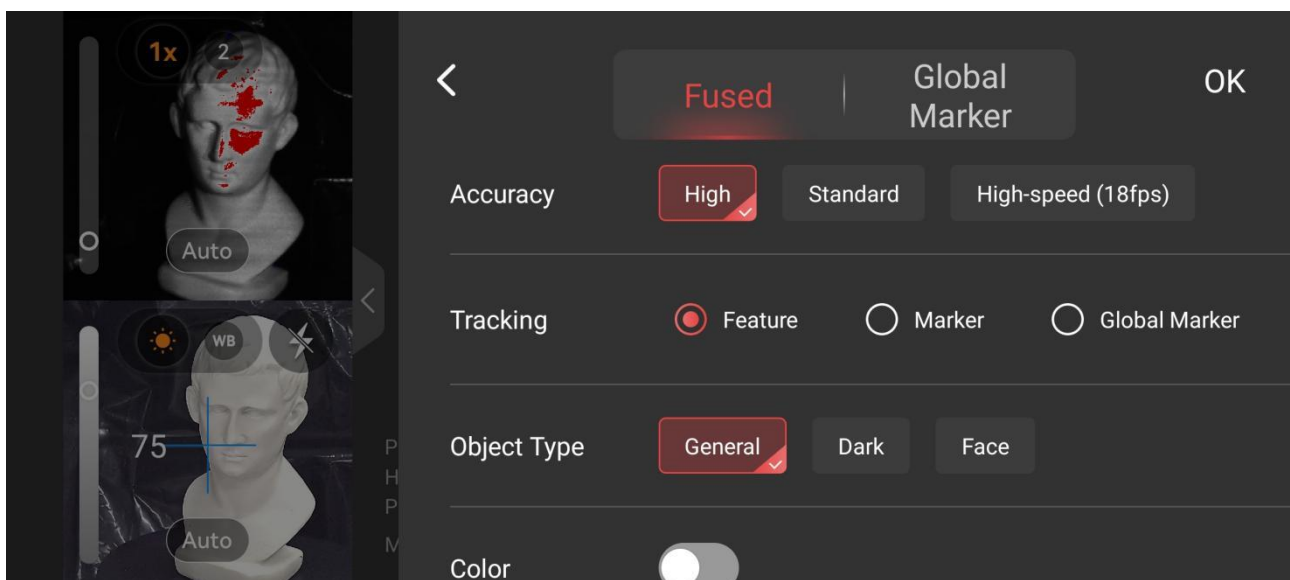
 Undo: Tap to add back the removed frames.

⑨ Model

Tap the Model button to perform post-processing or manage projects and models.

5.2.2 Scan Settings

Note: Some of these settings depend on the Revopoint 3D scanner model.



① Accuracy

Standard: For capturing simple objects that don't have complex and detailed surfaces.

High: For capturing highly detailed objects.

High-speed: For capturing larger objects or people/body parts quickly with faster frame rates and smooth frame stitching.

Note: The maximum fps and object type in High-speed mode depend on the scanner's model.

② Tracking Mode

Feature: For objects with distinct surface features and no repeating patterns, such as sculptures or people.

Marker: For capturing large flat surfaces that don't have distinct details or symmetrical items like balls or bowls. It must be used with marker points for tracking aids.

Global Marker: Capture the markers to calculate the global marker coordinates and scan the point clouds based on them. This provides more accurate results when scanning featureless large objects.

Note: To learn more about using tracking modes correctly, refer to the **Scanning Tips** section.

③ Object Type

General: This is the standard object type. Pick this type if the object doesn't match the other options below.

Dark: Scan objects with dark surfaces, such as black or dark gray clothes. Some dark items such as black leather or metal surfaces which will absorb or reflect light may still need to be treated with scanning spray to make them scannable.

Face: Scan people's faces.

Body: Scan people's body.

Large Object: Scan larger objects quickly. Only available for certain scanners in high-speed accuracy mode.

Note: Available object types and the captured object's size depend on the scanner's model.

④ Color Scanning

Enable it to capture color data using the scanner's RGB camera.

When performing a color scan, ensure the object is evenly lit with soft light for optimal color capture results.

Note: Texture mapping can be applied only when Color Scanning is enabled.

5.3 Model Processing Interface

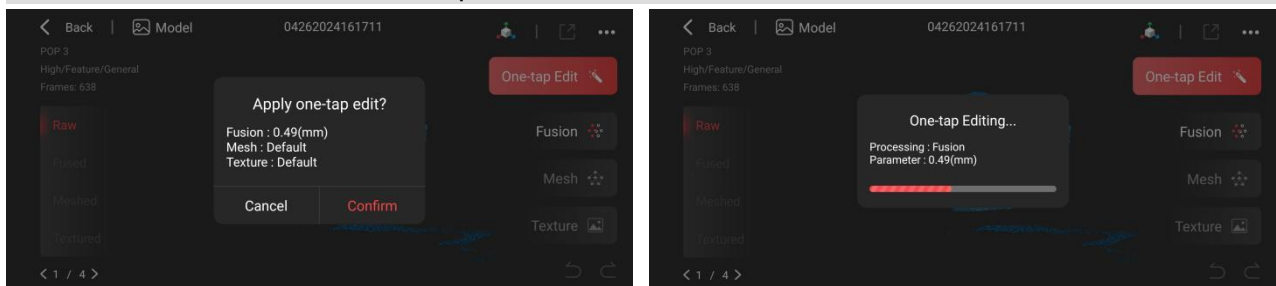
After scanning, you'll have raw point cloud data, as shown below. In this interface, you can post-process the raw data. There are two post-processing methods: **One-tap Edit** and **Manual Edit**.



5.3.1 One-tap Edit

If you tap “One-tap Edit”, Revo Scan will automatically perform point cloud fusion, mesh, and texture (if color scanning was enabled).

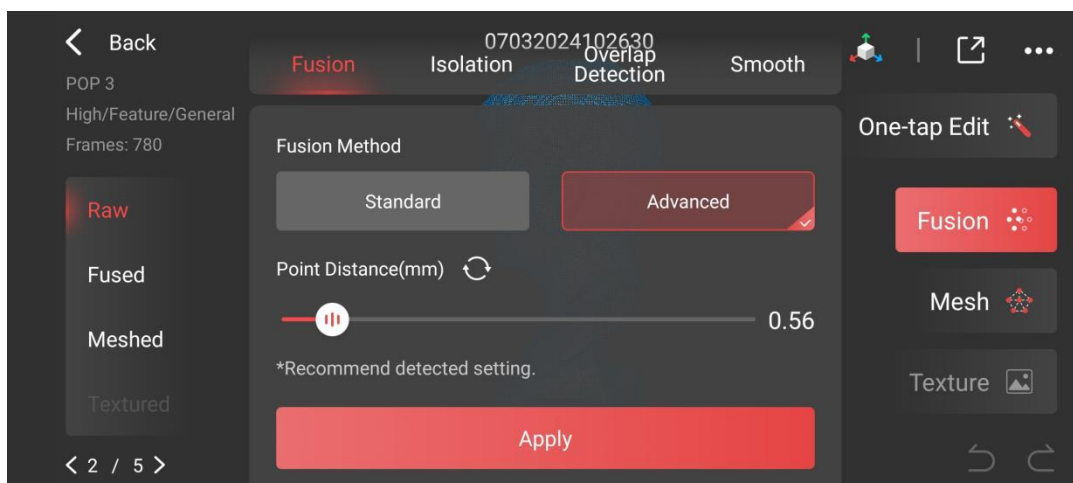
Note: For new users, the “One-tap Edit” function is recommended for the first few scans.



5.3.2 Manual Edit

In manual editing, you can fully edit your raw point cloud data during every step of the process.

① Point Cloud Fusion



The initial unprocessed raw point cloud from the scan is a collection of individual data sets or frames. It must first be fused into a unified point cloud to make it editable. There are two fusion methods:

- **Standard:** It has a faster processing time and is better for processing large data scans with many frames.
- **Advanced:** It produces a high-quality point cloud but has a longer processing time. It is suitable for models with high detail requirements.
- **Point Distance:** The average distance between the adjacent points in a fused model.

Note: Despite having a higher minimum point distance than standard fusion, advanced fusion will produce a more detailed model due to more advanced algorithms.

Suggested Settings

Set a lower point distance for objects that have a lot of detail.

Set a higher point distance for objects with many flat featureless surfaces.

After performing fusion on the point cloud, use the following point cloud editing tools to remove unwanted data and refine your point cloud before either exporting or meshing the data.

● Isolation

Detects and removes the isolated point cloud data disconnected from the main point cloud model.

The isolation rate: The percentage of points within isolated point clouds relative to the total number of points.

Setting higher isolation rates results in more isolated point clouds being detected.

● Overlap Detection

Identifies and deletes overlapping data in the point cloud for a more consistent model. This tool can be used repeatedly to simplify point cloud data.

If the distance between two points in the model is smaller than the set overlap distance, these points are considered overlapping portions.

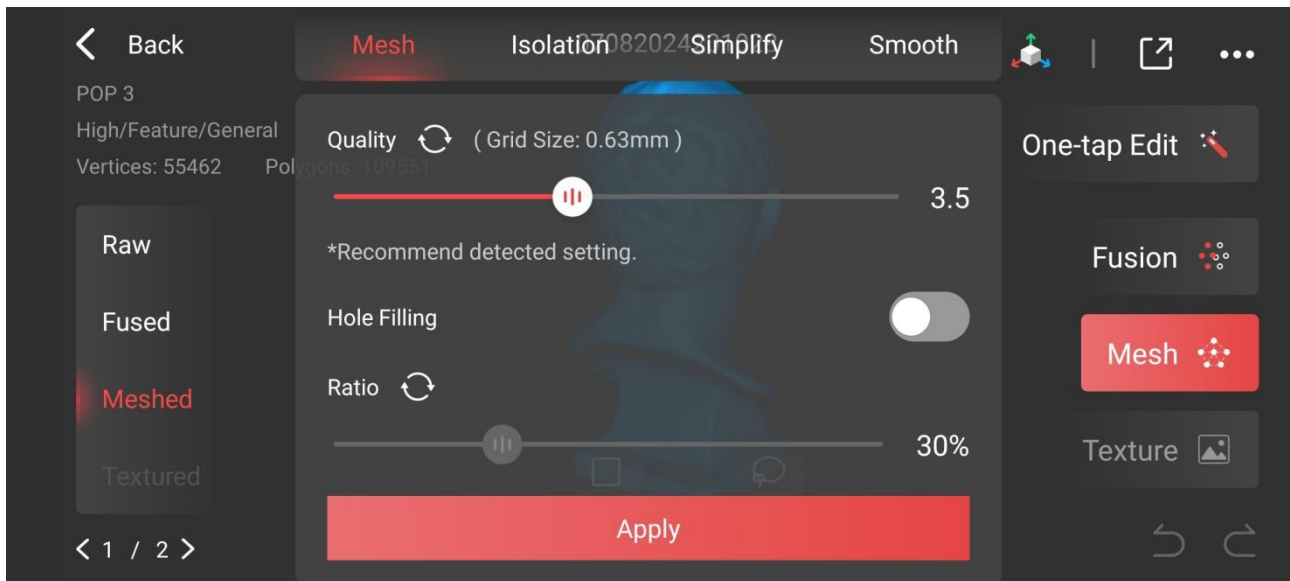
Setting a larger overlap distance will result in more overlapped areas being detected.

● Smooth

Remove noise from the point cloud to make it smoother.

To use it, select its strength and the number of times it applies smoothing consecutively. Excessive smoothing may result in loss of details.

② Mesh



Before being used in most 3D modeling or slicing software, the point cloud must first be meshed to create a solid 3D model (suitable for 3D printing). Mesh is created by constructing triangles from the points in the point cloud to create a solid surface.

The quality settings control the generated mesh model's density and level of detail. Setting a higher quality parameter results in a denser, more detailed mesh model. Keep in mind that selecting a higher-quality parameter also increases the processing time.

Suggested Settings

Set a higher mesh quality if the object has a lot of fine details.

Set a lower mesh quality for objects with many flat, featureless surfaces.

Hole-Filling tool: Enable this function, and Revo Scan automatically identifies and fills all the holes on the mesh model.

Ratio: The percentage of the hole diameter to the overall mesh size. The holes smaller than this ratio will be filled.

Note: Trying to fill large holes may result in a distorted surface. If you need to fill large holes, share the project to Revo Scan (PC) and fill the holes manually. Refer to the **How to share a project** section.

After meshing, you can use the following mesh editing tools to edit and optimize the meshed model.

● Isolation

Detects and removes isolated mesh data disconnected from the main mesh.

The isolation rate: The percentage of an isolated mesh relative to the total number of meshes.

Setting a higher value for the isolation rate will result in more mesh data being selected.

● Simplify

Reduces the amount of mesh data in the model for more manageable processing, storage, and sharing.

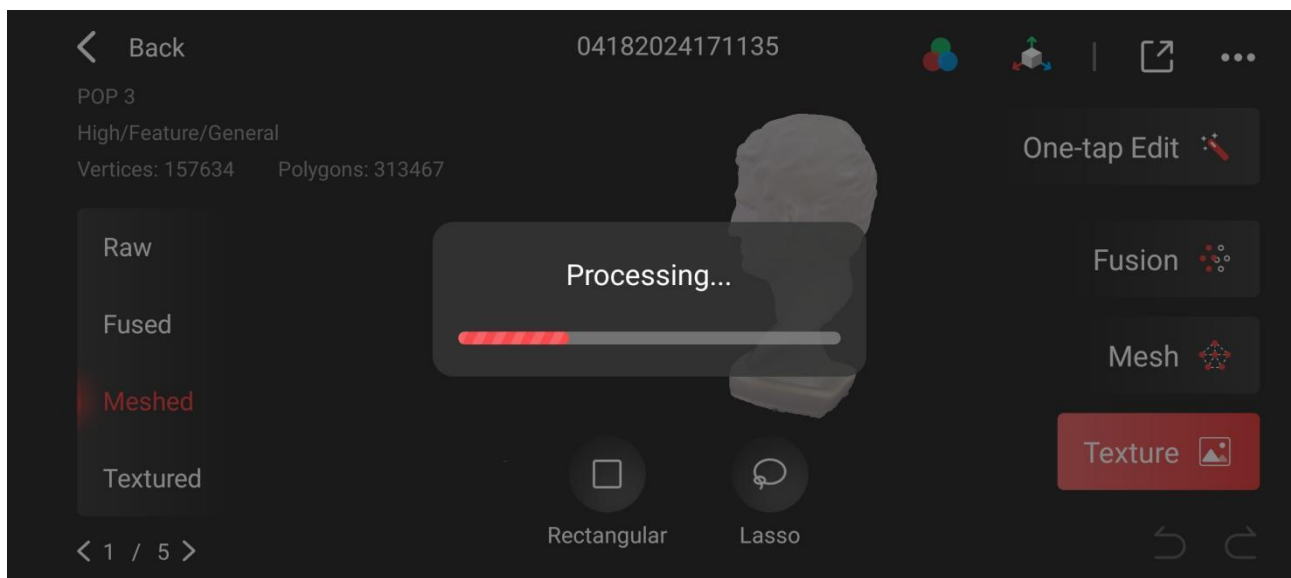
Ratio: The percentage of simplified mesh data to the total data volume. Setting a higher ratio will remove more details, resulting in a smaller file size.

● Smooth

Removes noise from the mesh model to make it smoother.

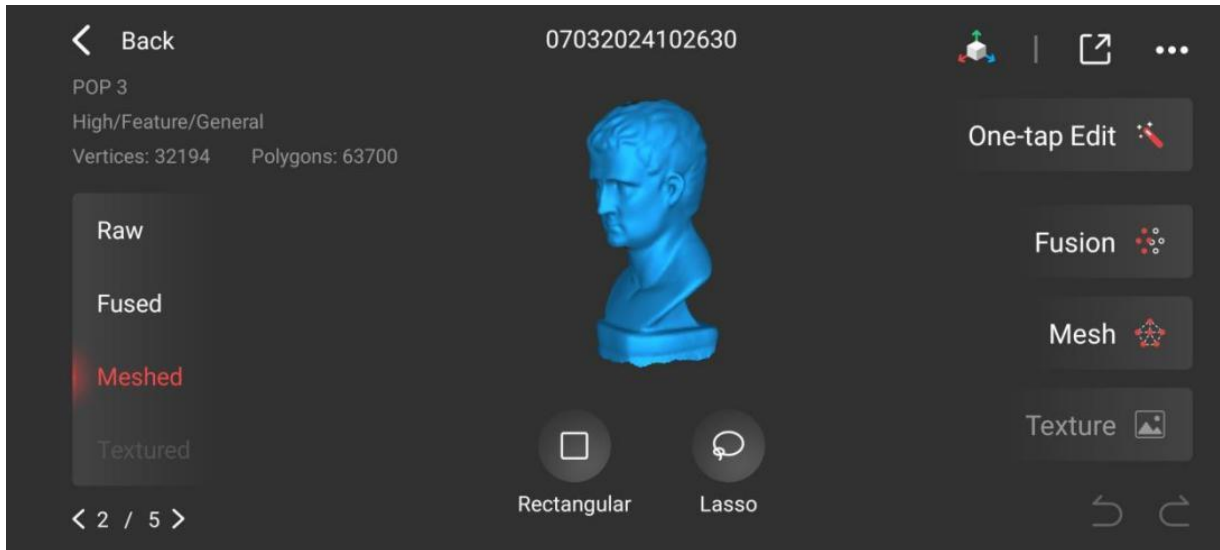
To use it, select its strength and the number of times it applies smoothing consecutively.

③ Texture



After creating the meshed model, it can be texturized (if a color scan was performed). Texture applies the image data captured by the RGB camera onto the processed mesh model to make the model's color more realistic. Tap "Texture" to apply color texture mapping to the 3D model.

5.3.3 Selection Tools



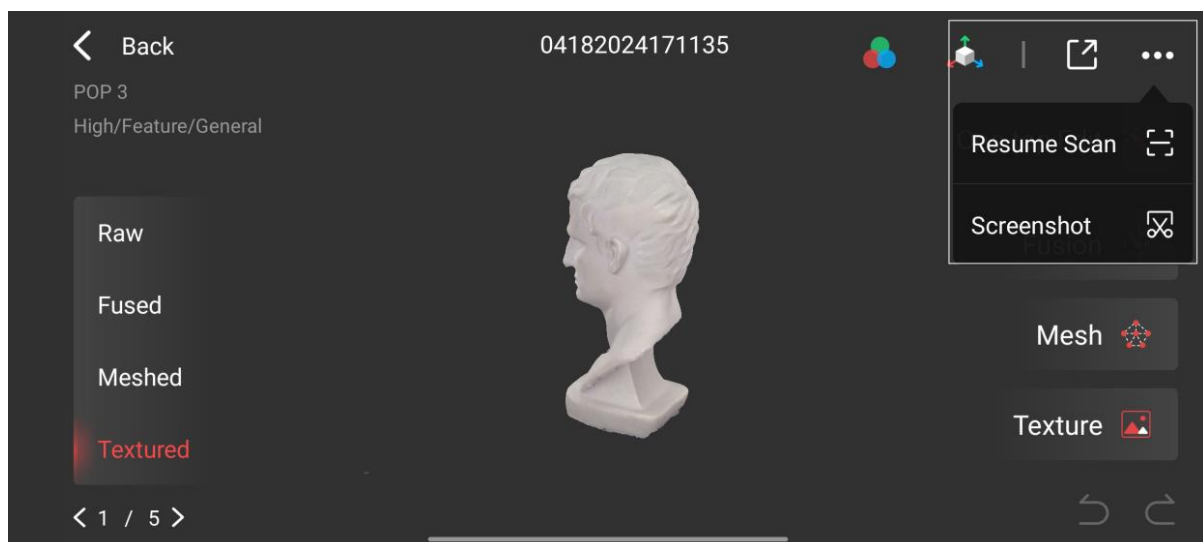
Use the rectangular selection or lasso selection to select unwanted data and delete it.

Rectangular Selection: Drag with one finger to draw a rectangle around any point on the model to select that area.

Lasso Selection: Drag with one finger to draw a shape around an area to select it.

Invert Selection: Changes the selected area from the currently selected area to anything that wasn't selected.

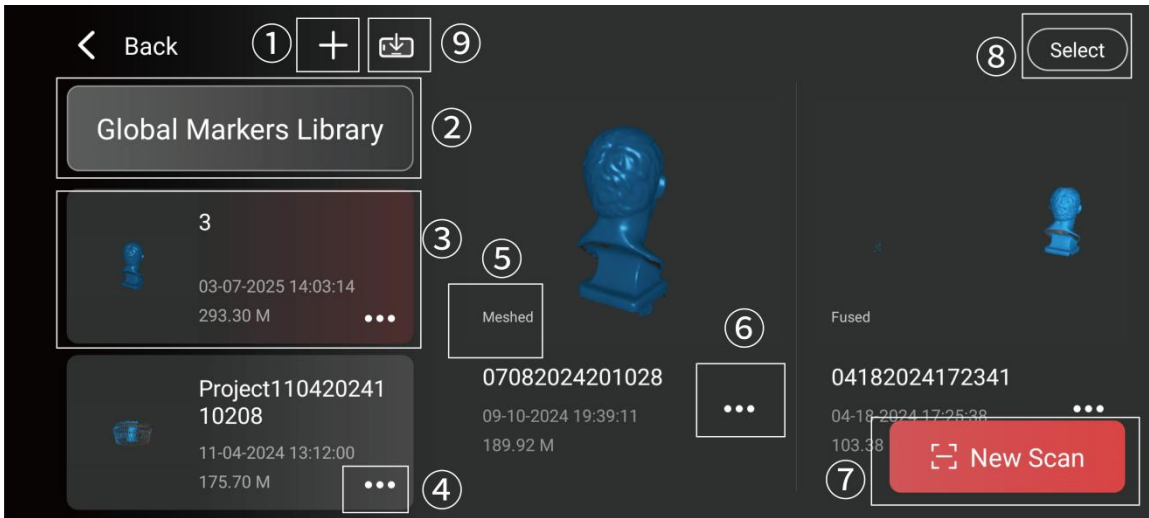
5.3.4 Others



- Tap the  button in the upper right corner to share the model with other apps on your phone.
- Tap the  icon to resume your scan or create a screenshot.

6. Model & Project Management

Open Revo Scan and tap the Model icon in the lower right corner to manage your models or projects.



6.1 Project Management

① New Project

Tap to create a new project.

② Global Markers Library

Used to store and manage global marker coordinates.

③ Project Info

Displays the model preview, the project name, the last modified time, and the project's size.

④ Project Management

Tap to share, rename, or delete the project.

How to Share a Project

Sharing to a PC	Sharing to Other Apps
1) Ensure the phone and PC are connected to the same Wi-Fi network.	1) Tap a Project's More icon ▶ Share ▶ More.
2) Tap a Project's More icon ▶ Share ▶ Start Sharing	
3) Click the Import from Phone option in Revo Scan (PC)'s File menu.	
4) Enter the PIN code or scan the QR code on your PC.	2) Tap the Start Sharing button, and share the scans to other apps.
5) Start the file transfer.	
Note: Don't minimize the app or turn off the phone's display during transfer, or it'll fail.	

6.2 Model Management

⑤ Model Status

Shows the current status of a model, including Raw/Fused/Meshed/Textured.

⑥ Individual Model Management

Tap to continue scanning, rename, or delete the model.

⑦ New Scan

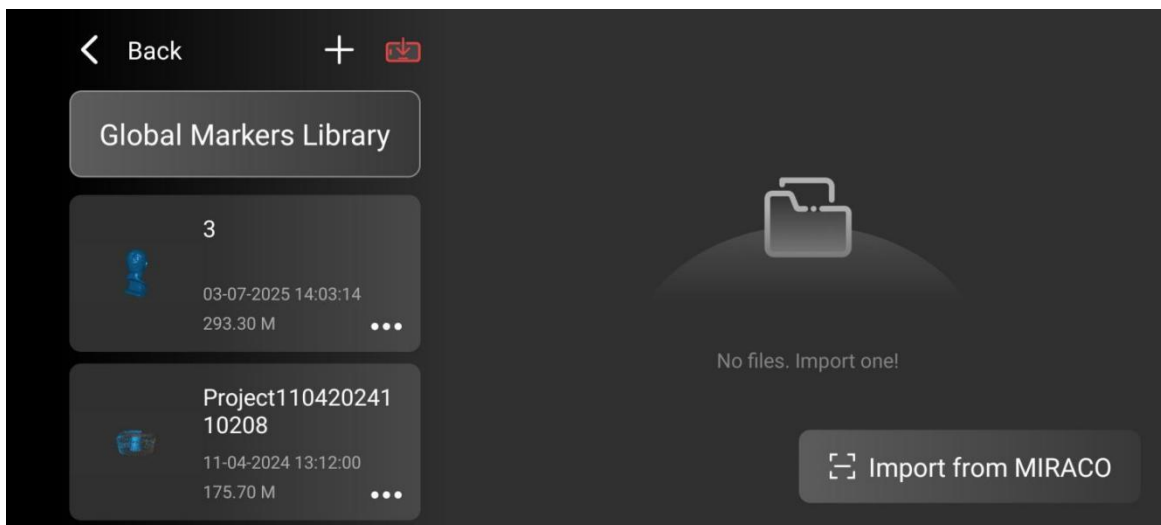
Create a new scan in the existing project. This button is functional when the scanner is connected.

⑧ Multiple Models Management

Tap to batch-delete multiple models in a project.

⑨ Import Models

Display the imported models. Tap the “**Import from MIRACO**” button at the bottom right and scan the QR code on the MIRACO to import models.



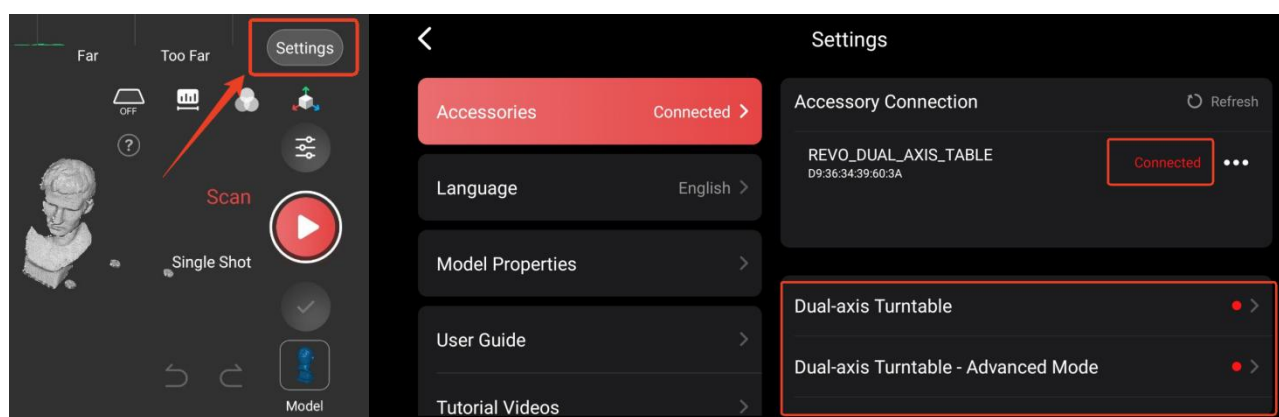
7. Using Accessories

You can connect and control accessories, including the Dual-axis Turntable, Large Turntable and Handheld Stabilizer, via Revo Scan 5.

Before connecting, ensure that bluetooth on your mobile device is turned on and the accessory is powered on.

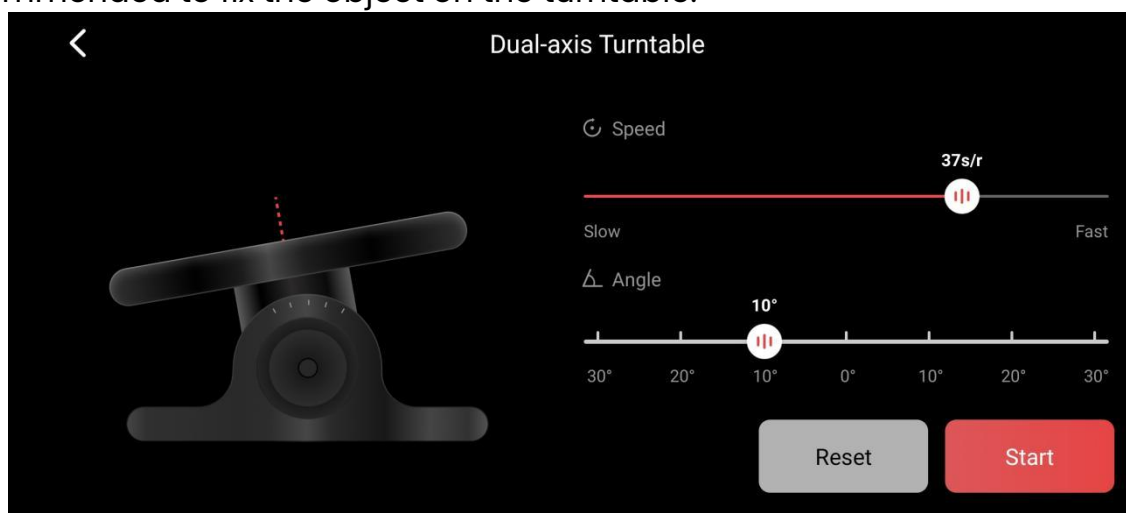
Follow the steps below to connect:

- ① Tap the Settings button in the top right corner to access accessories settings. Wait a few moments for the accessory to connect. Once it's connected, it indicates “Connected” on the interface.
- ② Select the connected accessory to access its settings.



7.1 Dual-axis Turntable

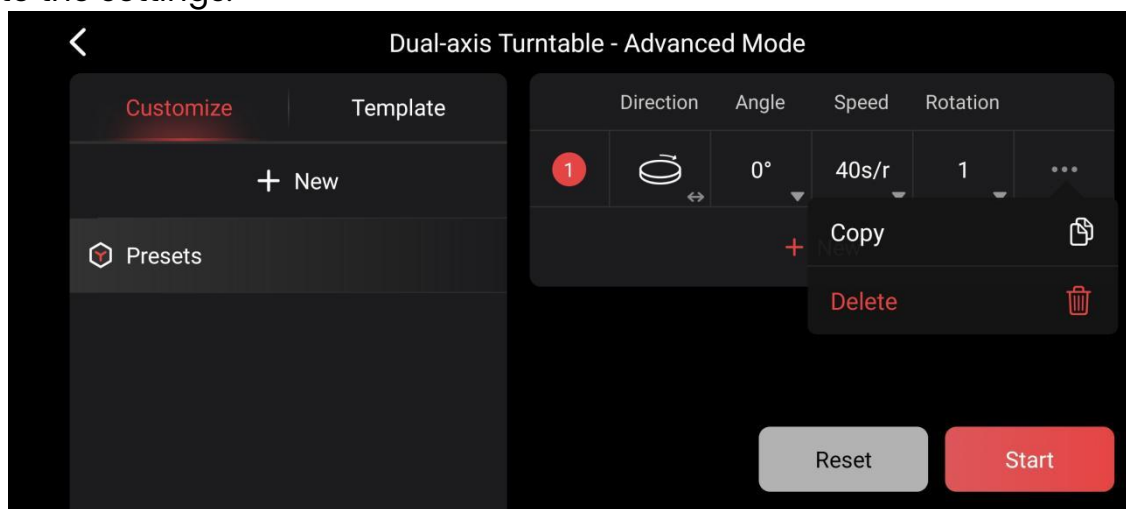
Tap the “Dual-axis Turntable” button to adjust its speed and angle. Tap “Start” to enable the turntable to work or reset the turntable to its original position. It’s recommended to fix the object on the turntable.



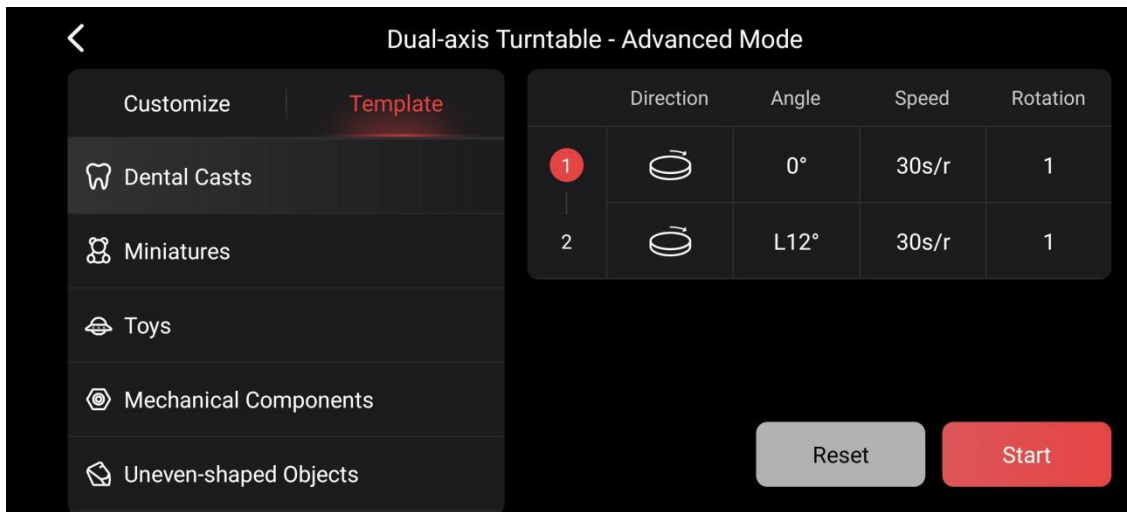
7.2 Dual-axis Turntable - Advanced Mode

Tap the “Dual-axis Turntable - Advanced Mode” button to set its direction, angle, speed, and rotation.

Customize: Tap “New” to create and name a new preset. Then, set the parameters on the right side. You can also tap the More button $\dots$ to copy or delete the settings.

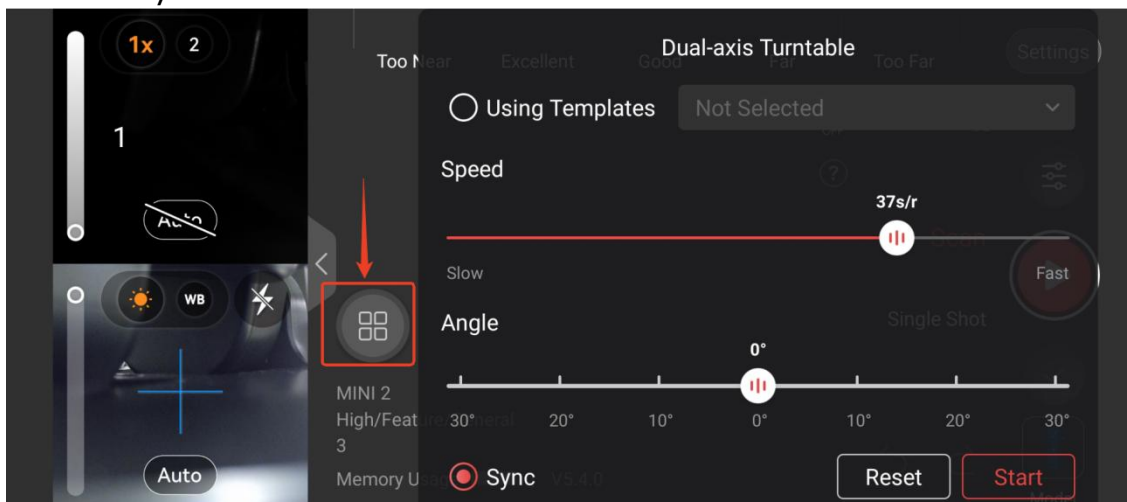


Template: Revo Scan 5 provides turntable templates for some scanning scenarios.



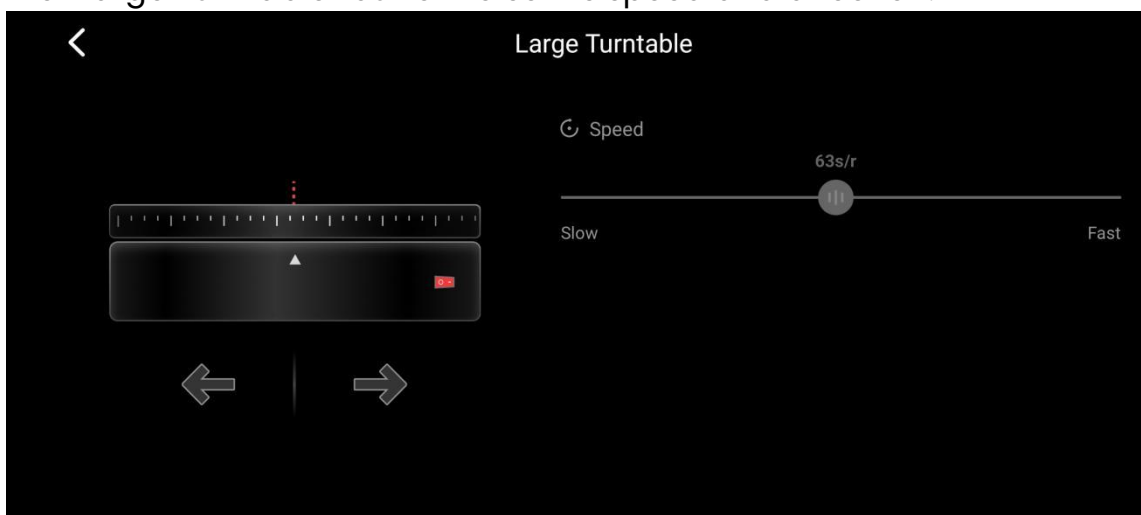
During a scan, tap the shortcut button on the right of the camera preview window to access the accessory setting interface if required.

Sync: Activate sync to start and pause both the scanner and the turntable simultaneously.



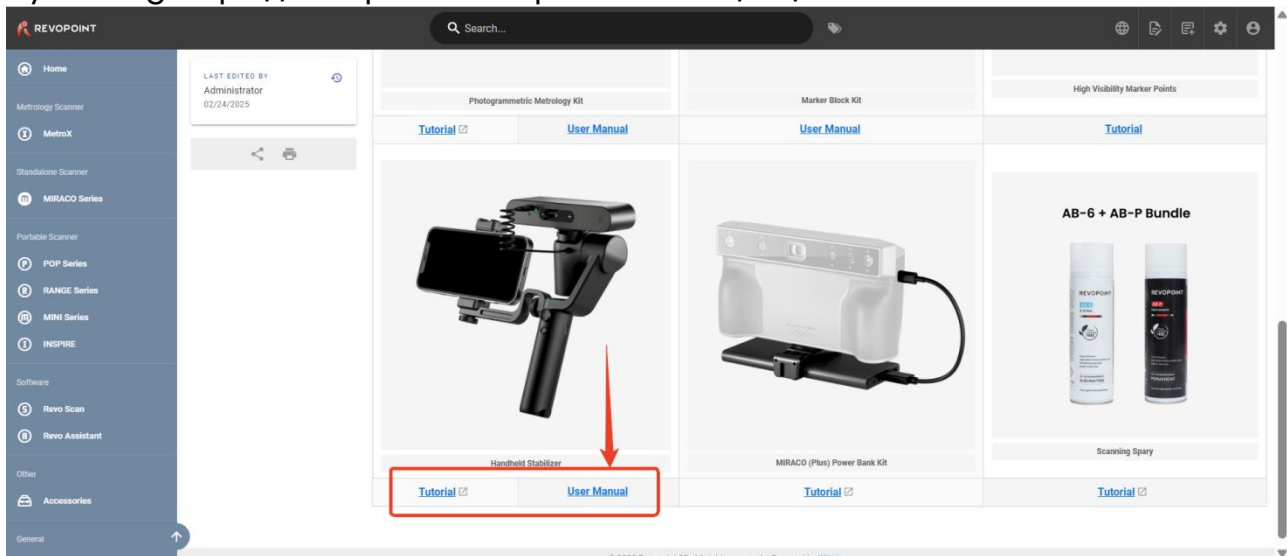
7.3 Large Turntable

Tap the "Large Turntable" button to set its speed and direction.



7.4 Handheld Stabilizer

Connect the handheld stabilizer to enable it. Refer to its tutorial or user manual by visiting <https://revopedia.revopoint3d.com/en/Accessories>.



8. Help

8.1 Scanning Tips

● Scanning Feature-Rich Objects



Feature-rich objects are usually straightforward to capture as their detailed surfaces have many distinct features for the scanner to track.

- ① Select **Feature** in the Tracking Mode.
- ② Scan the object.

● Scanning Featureless Objects



Successfully capturing symmetrical or flat featureless objects requires preparation as they lack distinct features for the scanner to track. This can be dealt with in several ways:

- **Place Marker Points**

- ① Place marker points on the object's surface irregularly.
- ② Select **Marker** or **Global Marker** in the Tracking Mode.
- ③ Scan the object.



For different markers and scanners, follow the guidelines below:

- **Large markers (10 mm outer diameter)** – for POP series, INSPIRE, RANGE series, MIRACO series (Far Mode)

Place markers at a distance of 3-4 cm | 5 or more markers per frame. If using the RANGE series or MIRACO series (Far Mode), place markers at a distance of 6 - 8 cm | 5 or more markers per frame.

- **Small markers (6 mm outer diameter)** – For MINI series, MIRACO series (Near Mode)

Place markers at a distance of 1-2 cm | 5 or more markers per frame.

Note: If using scanning spray and markers, it's better to apply the scanning spray first and then place the markers. This makes it slightly easier to remove the markers when it's done.

- **Magic Mat**

The Magic Mat can be placed underneath some objects for a fast sticker-free marker point solution.



- **Turntable Topper**

Place the Turntable Topper on top of the turntable to provide pre-placed marker points for objects with a surface area too small to place enough marker points.



• Reference Objects

Place feature-rich objects (like the small statue included with most Revopoint 3D scanners) around the object to be scanned. When setting up the scan, select **Feature Tracking** Mode. The scanner will capture these along with the object being scanned, and they can easily be removed in post-processing.



● Black, Transparent, Metal or Shiny Surfaces

Surfaces with these properties can be challenging to scan as the surfaces will absorb the light, reflect nothing, or reflect too much for the scanner to see what's there.

These kinds of surfaces need to be made matte to deal with it. This can be done in several ways:

- ① Use scanning spray to lightly and evenly coat the object's surface.
- ② Use a fine powder like baby or makeup powder to lightly coat the object's surface.

For more tips, please visit youtube.com/@Revopoint3D.

8.2 Join a Fun Scanning Community

Welcome to Revopoint's Official Forum forum.revopoint3d.com. You can find the latest product information, tutorials, showcases from our users, scanning discussions, experience sharing, various activities, and more.



This content is subject to change.

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